

Washington State Specific Objectives for Intravenous Therapy Technician



**OFFICE OF EMERGENCY MEDICAL
AND TRAUMA PREVENTION**

February 1999

The Washington State EMT-Intermediate Program Intent:

The purpose of the intermediate life support level of training and certification is to provide specific, limited life-saving skills to rural areas that cannot yet make the commitment to develop or maintain full paramedic service. This level is not to substitute for paramedics in existing services, diminishing the level of existing care. Approval of ILS course and certification of personnel shall be based on the Regional EMS/TC Plan, and shall result in an improved level of care. For any patient requiring care beyond the BLS level, it is also intended that when paramedic service is available, ILS personnel shall contact medical control for advice about rendezvous with paramedics as soon as possible.

Intravenous Therapy Technician Definition:

"Intravenous therapy technician" means a person who:

- (a) Has been trained in an approved program to initiate IV access and administer intravenous solutions under written or oral authorization of an MPD or approved physician delegate; and
- (b) Has been examined and certified as an intravenous therapy technician by the Department or by the University of Washington's school of medicine.

Intravenous Therapy Technician Course Content:

The Department recognizes the United States Department of Transportation National Standard EMT Intermediate training course curriculum as amended by the Department. Training for the following certification levels are contained in this curriculum. **Specific lessons needed to meet the training requirements for each level are contained on the following page.** The specific objectives needed to meet the training requirements for each lesson are contained in the following Appendix E, which was extracted from the curriculum.

- IV Tech: Those parts of the Emergency Medical Technician - Intermediate course which relate to IV therapy and intraosseous infusion (including saline locks).

Required Instruction for Reciprocal Certification as an Intravenous Therapy Technician in Washington State

The following section contains specific objectives for each of the lessons listed below as “required” from the EMT-Intermediate curriculum. This curriculum may be obtained as a resource from the Office of Emergency Medical and Trauma Prevention web site shown below.

<http://www.doh.wa.gov/hsqa/emtp/pub&rept.htm>

Please review the objectives in each of the “required” lessons below. If you determine additional study or instruction is necessary to meet these training requirements, complete the following steps:

1. Study educational material pertinent to the objectives you must meet using the EMT-Intermediate curriculum from the web address shown above and paramedic or intermediate textbooks, or, receive training from a paramedic or content area expert in those topic areas. If you do not personally have access to the Internet, most local libraries have access. The trauma triage tool and EMS-NO CPR information is available in the curriculum and individually on the web site.
2. When you have completed the necessary Washington State Specific Objectives (WSSOs) and feel comfortable that you are knowledgeable in these objectives, complete and sign the attached WSSO Affirmation Statement.
3. Return the WSSO Affirmation Statement with your other documentation to the address provided on the application. After eligibility is determined you may be approved to take the written examination.

Required Lessons

Section 1 – Preparatory

Lesson 1-1: EMT-I Roles & Responsibilities.

Lesson 1-2: Med./Legal/ Ethics

Lesson 1-3: Documentation

Section 2 – Essentials

Lesson 2-1: Human Systems

Lesson 2-2: Patient Assessment

Lesson 2-3: Clinical Decision Making

Lesson 2-6: Assessment and Management of Shock

Lesson 2-7: IV & IO Infusion

Lab Proficiency Required

- IO line placement

Clinical/Field Internship Requirements

Documented proof of:

- 10 IV insertions on Humans

WASHINGTON STATE SPECIFIC OBJECTIVES

Before your EMS training can be approved, you must affirm that you understand the *Washington State specific Objectives* for the level of certification you are applying for. This is **required** knowledge for all certification candidates, and contains specific objectives that establish the standard for field performance in Washington State. Questions regarding these objectives are included in the written examination.

I understand that this information is vital to my ability to safely provide patient care in Washington State, and declare that I am knowledgeable in the Washington State specific Objectives for:

(Please circle one only)

FIRST RESPONDER

EMT

IV THERAPY TECHNICIAN

AIRWAY TECHNICIAN

IV/AIRWAY TECHNICIAN

ILS TECHNICIAN

ILS/AIRWAY TECHNICIAN

PARAMEDIC

Print Name

Date

Applicant Signature

Specific Lesson Objectives

Section 1 - Preparatory

Lesson 1-1: Roles and Responsibilities of the EMT Intermediate

TERMINAL INSTRUCTIONAL OBJECTIVE

At the completion of this lesson, the EMT-Intermediate will understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers.

Integrate the principles of the Washington State Trauma Triage Procedures into trauma response situations.

COGNITIVE OBJECTIVES

At the completion of this lesson, the EMT-Intermediate student will be able to:

1. Define the following terms: (C-1)
 - Medical direction
 - Medical Control
 - Protocols
 - Patient Care Procedures
 - Trauma Triage Tool
2. Describe the recognized levels of EMS training/education, leading to licensure/certification in his or her state. (C-1)
3. Explain EMT-Intermediate recertification requirements in Washington state [Provide Student Handout on recertification in Washington State . (C-1)
4. Review examples of local protocols. (C-1)
5. Discuss prehospital care as an extension of the physician. (C-1)
6. Describe the relationship between ALS on the scene, the EMT-Intermediate on the scene, and the EMS physician providing on-line medical direction/control (C-1)
7. Discuss the Washington State Trauma Triage Tool and how it is used to direct trauma patient. (C-1)
8. Understand the purpose of the Washington State Trauma Triage Tool. (C-1)
9. Understand who developed and approved the Washington State Trauma Triage Tool. (C-1)
10. Understand the components of the Washington State Trauma Triage Tool. (C-1)
11. Understand regional patient care procedures. (C-1)
12. Understand how to use the Washington State Trauma Triage Tool according to the regional approved Patient Care Procedures. (C-1)
13. Understand the difference between Regional Patient Care Procedures and Medical Program Director approved Patient Care Protocols. (C-1)
14. Understand the purpose of trauma wristbands. (C-1)

Lesson 1-2: Medical/Legal Issues and Ethics

TERMINAL INSTRUCTIONAL OBJECTIVE

At the completion of this lesson, the EMT-Intermediate will understand the legal and ethical issues that impact the decisions made in the out-of-hospital environment

MEDICAL LEGAL

COGNITIVE OBJECTIVES

At the completion of this lesson, the EMT-Intermediate student will be able to:

1. Differentiate between the scope of practice and the standard of care for EMT-Intermediate practice (C-3)
2. Define and describe what constitutes abandonment. (C-1)
3. Define and describe what constitutes Assault. (C-1)
4. Define and describe what constitutes Battery. (C-1)
5. Define and describe what constitutes Abandonment, i.e., when ILS Technician turns a patient's care over to an IV Technician. (C-1)
6. Given a scenario, describe appropriate patient management and care techniques in a refusal of care situation. (C-3)
7. Identify the legal issues involved in the decision not to transport a patient, or to reduce the level of care being provided during transportation. (C-1)
8. Discuss the responsibilities of the EMT-Intermediate relative to advanced directives/EMS No-CPR, and withholding or stopping resuscitation efforts (Refer to existing local protocols). (C-1)
9. Describe the actions that the EMT-Intermediate should take to preserve evidence at a crime or accident scene. (C-1)
10. Describe the importance of providing accurate documentation (oral and written) in substantiating an incident. (C-1)
11. Describe the characteristics of a prehospital care report required to make it an effective patient care record. (C-1)

Lesson 1-3: Documentation

COGNITIVE OBJECTIVES

In order to properly document, the EMT-Intermediate shall:

1. Identify and use medical terminology correctly. (C-1)
2. Recite appropriate and accurate medical abbreviations and acronyms. (C-1)
3. Record all pertinent administrative information. (C-1)
4. Describe the information pertinent to agency reimbursement. (C-1)
5. Analyze the documentation for accuracy and completeness, including spelling. (C-3)
6. Identify and eliminate extraneous or nonprofessional information. (C-1)
7. Describe the differences between subjective and objective elements of documentation. (C-1)
8. Evaluate a finished document for errors and omissions. (C-3)
9. Evaluate a finished document for proper use and spelling of abbreviations and acronyms. (C-3)
10. Advocate the confidential nature of an EMS report. (C-1)

11. Describe the potential consequences of poor documentation. (C-1)
12. Describe the special considerations concerning patient refusal of transport. (C-1)
13. Describe the special considerations concerning mass casualty incident documentation. (C-1)
14. Apply the principles of documentation to computer charting, as this technology becomes available. (C-3)
15. Identify the pertinent, reportable clinical data of each patient interaction. (C-1)
16. Record the pertinent reportable clinical data appropriately. (C-1)
17. Note and record "pertinent negative" clinical findings. (C-1)

Section 2 - Essentials

Lesson 2-1: Overview of Human Systems

COGNITIVE OBJECTIVES

At the completion of this lesson, the EMT Intermediate student will be able to use the principles of anatomy and physiology as a foundation for the clinical practice of out of hospital emergency medicine.

Organization and General Plan of the Body

1. Review the definition of anatomy & physiology. (C-1)
2. Define homeostasis, and use an example to explain. (C-1)
3. Review and state the anatomical terms for the parts of the body. (C-1)
4. Use proper terminology to describe the location of body parts with respect to one another. (C-1)
5. Name the body cavities, their membranes, and some organs within each cavity. (C-1)
6. Explain how and why the abdomen is divided into smaller areas. Be able to name organs in these areas. (C-1)

Tissues and Membranes

7. Describe the general characteristics of each of the four major categories of tissues. (C-1)
8. Describe the functions of the types of epithelial tissues with respect to the organs in which they are found. (C-1)
9. Describe the functions of the connective tissues, and relate them to the functioning of the body or a specific organ system. (C-1)
10. Explain the differences, in terms of location and function, among skeletal muscle, smooth muscle, and cardiac muscle. (C-1)
11. Name some membranes made of connective tissue. (C-1)

The Integumentary System

12. Name the two major layers of the skin and the tissue of which each is made. (C-1)
13. Describe how the arterioles in the dermis respond to heat, cold, and stress. (C-1)
14. Name the tissues that make up the subcutaneous tissue, and describe their functions. (C-1)

The Skeletal System

15. Describe the functions of the skeleton
16. Explain how bones are classified, and give an example of each type. (C-1)
17. Name the major bones of the human skeleton (Be able to point to each on diagrams, skeleton models, or yourself). (C-1)
18. Describe the functions of the skull, vertebral column, rib cage, scapula, and pelvic bone. (C-1)
19. Explain how joints are classified. For each type, give an example, and describe the movement possible. (C-1)

The Muscular System

20. Describe muscle structure in terms of muscle cells, tendons, and bones. (C-1)
21. Describe the structure and function of the muscle system and identify three types of muscle. (C-1)
22. Learn the major muscles of the body and their functions. (C-1)

The Nervous System

23. Name the divisions of the nervous system and the parts of each, and state the general functions of the nervous system. (C-1)
24. State the functions of the parts of the brain; be able to locate each part on a diagram. (C-1)
25. Name the meninges and describe their locations. (C-1)
26. State the locations and functions of cerebrospinal fluid. (C-1)
27. Explain how the sympathetic division of the autonomic nervous system enables the body to adapt to a stress situation. (C-1)
28. Explain how the parasympathetic division of the autonomic nervous system promotes normal body functioning in relaxed situations. (C-1)

The Senses

29. Explain the general purpose of sensations. (C-1)
30. Describe the characteristics of sensations. (C-1)
31. Explain referred pain and its importance. (C-1)
32. Explain the importance of baroreceptor. (C-1)

Blood

33. Describe the composition and explain the functions of blood plasma. (C-1)
34. State the function of red blood cells, including the protein and the mineral involved. (C-1)
35. State what platelets are, and explain how they are involved in hemostasis. (C-1)

The Heart

36. Describe the location of the heart and the pericardial membranes. (C-1)
37. Name the chambers of the heart and the vessels that enter or leave each. (C-1)
38. Name the valves of the heart, and explain their functions. (C-1)
39. Describe coronary circulation, and explain its purpose. (C-1)
40. Describe the cardiac cycle. (C-1)
41. Explain stroke volume, cardiac output. (C-3)

The Vascular System

- 42. Describe the structure of arteries and veins, and relate their structure to function. (C-1)
- 43. Describe the structure of capillaries, and explain the exchange processes that take place in capillaries. (C-1)
- 44. Describe the pathway and purpose of pulmonary circulation. (C-1)
- 45. Name the branches of the aorta and their distributions. (C-1)
- 46. Name the major systemic veins, and the parts of the body they drain of blood. (C-1)
- 47. Describe the modifications of fetal circulation, and explain the purpose of each. (C-1)
- 48. Define blood pressure. (C-1)
- 49. Explain how the heart and kidneys are involved in the regulation of blood pressure. (C-3)

The Respiratory System

- 50. State the general function of the respiratory system. (C-1)
- 51. Describe the structure and functions of the nasal cavities and pharynx. (C-1)
- 52. Describe the structure of the larynx and explain the speaking mechanism. (C-1)
- 53. Describe the structure and functions of the trachea and bronchial tree. (C-1)
- 54. State the locations of the pleural membranes, and explain the functions of serous fluid. (C-1)
- 55. Describe the structure of the alveoli and pulmonary capillaries, and explain the importance of surfactant. (C-1)
- 56. Name and describe the important air pressures involved in breathing. (C-1)
- 57. Describe normal inhalation and exhalation and forced exhalation. (C-1)
- 58. Explain the diffusion of gases in external respiration and internal respiration. (C-1)
- 59. Describe how oxygen and carbon dioxide are transported in the blood. (C-1)
- 60. Name the pulmonary volumes and define each. (C-1)

The Digestive System

- 61. Describe the general functions of the digestive system, and name its major divisions. (C-1)
- 62. Describe the structure and functions of the teeth and tongue. (C-1)
- 63. Describe the location and function of the pharynx and esophagus. (C-1)
- 64. Describe the location, structure, and function of the stomach, liver, gallbladder, pancreas, and small intestine. (C-1)
- 65. Describe the location and functions of the large intestine. (C-1)
- 66. Describe the functions of the liver. (C-1)

The Urinary System

- 67. Describe the location and general function of each organ of the urinary system. (C-1)
- 68. State the general function of the urinary system. (C-1)

Fluid-Electrolyte and Acid-Base Balance

- 69. Describe the water compartments and the name for the water in each. (C-1)
- 70. Explain how water moves between compartments. (C-1)
- 71. Explain the regulation of the intake and output of water. (C-1)
- 72. Describe the effects of acidosis and alkalosis. (C-1)

Lesson 2-2: Patient Assessment

Topic - History Taking

COGNITIVE OBJECTIVES

At the completion of this topic, the EMT-Intermediate student will be able to:

1. Describe the techniques of history taking. (C-1)
2. Describe techniques of establishing a rapport with the patient. (C-1)
3. Describe the importance of using good listening skills during the interview process. (C-1)
4. Describe the use of body language and touch for a means of communication. (C-1)
5. Describe methods to manage communication barriers. (C-1)
6. Describe open-ended questions. (C-1)
7. Describe direct questions. (C-1)
8. Differentiate between the use of open-ended and direct questions in patient interviewing. (C-3)
9. Describe the components of a S.A.M.P.L.E. patient history. (C-1)
10. Describe history-taking techniques when dealing with sensitive topics. (C-1)
11. Describe special challenges to history taking. (C-1)
 - Silence
 - Over talkative patients
 - Patients with multiple symptoms
 - Anxious patients
 - Reassurance
 - Anger and hostility
 - Intoxication
 - Crying
 - Depression
 - Sexually attractive or seductive patients
 - Confusing Behaviors or Histories
 - Limited communication skills
 - Talking with family and friends
12. Describe why patience and repetition may be necessary while taking a patient S.A.M.P.L.E. history. (C-1)

Topic - Techniques of Physical Examination

TOPIC TERMINAL OBJECTIVE

At the end of this topic, the EMT-Intermediate student will be able to explain the clinical significance of physical exam findings.

COGNITIVE OBJECTIVES

13. Define the following terms: inspection, palpation, and auscultation. (C-1)
14. Describe the techniques of inspection, palpation, percussion, and auscultation. (C-1)
15. Evaluate the importance of a general survey. (C-3)
16. Describe the examination of skin (C-1)
17. Differentiate normal and abnormal findings of the skin assessment. (C-3)

18. Distinguish the importance of abnormal findings of the skin assessment. (C-3)
19. Describe the examination of the head and neck. (C-1)
20. Describe the normal assessment findings of the skull. (C-1)
21. Describe the assessment of temperature. (C-1)
22. Describe the examination of the eyes. (C-1)
23. Distinguish between normal and abnormal assessment findings of the eyes. (C-3)
24. Describe the examination of the ears. (C-1)
25. Describe the examination of the nose. (C-1)
26. Describe the examination of the mouth. (C-1)
27. Describe the examination of the neck. (C-1)
28. Describe the survey of the chest. (C-1)
29. Describe the examination of the posterior chest. (C-1)
30. Differentiate the characteristics of breath sounds. (C-3)
31. Describe the examination of the anterior chest. (C-1)
32. Differentiate normal and abnormal assessment findings of the chest examination. (C-3)
33. Describe the examination of the arterial pulse including rate and rhythm. (C-1)
34. Distinguish normal and abnormal findings of arterial pulse. (C-3)
35. Describe the assessment of the jugular veins. (C-1)
36. Describe special examination techniques of the cardiovascular examination. (C-1)
37. Describe the examination of the abdomen. (C-1)
38. Describe the examination of the extremities. (C-1)
39. Describe the proper sequence of physical examination. (C-1)
40. Describe the general guidelines of recording examination information. (C-1)
41. Organize the findings of a patient examination. (C-1)
42. Discuss the considerations of examination of an infant or child. (C-1)
43. Discuss the considerations of examination of a patient with special needs. (C-1)

Topic - Patient Assessment

TOPIC TERMINAL OBJECTIVE

At the end of this topic, the EMT-Intermediate student will be able to integrate the principles of history taking and techniques of physical exam to perform a scene size-up, initial assessment, focused history and physical exam, detailed physical exam and an ongoing assessment.

COGNITIVE OBJECTIVES

At the completion of this topic, the EMT-Intermediate student will be able to:

44. Recognize hazards/potential hazards.(C-1)
45. Describe common hazards found at the scene of a trauma and a medical patient.(C-1)
46. Determine hazards found at the scene of a medical or trauma patient. (C-2)
47. Differentiate safe from unsafe scenes.(C-3)
48. Describe methods to making an unsafe scene safe. (C-1)
49. Discuss common mechanisms of injury/nature of illness.(C-1)
50. Predict patterns of injury based on mechanism of injury.(C-2)
51. Compare data regarding mechanism of injury to actual scenes. (C-3)

Washington State Specific Objectives – Intravenous Therapy Technician

52. Discuss the reason for identifying the total number of patients at the scene.(C-1)
53. Organize the management of a scene following size-up.(C-3)
54. Explain the reason for identifying the need for additional help or assistance. (C-1)
55. Summarize the reasons for forming a general impression of the patient during the initial assessment.(C-1)
56. Discuss methods of assessing mental status.(C-1)
57. Differentiate levels of consciousness in the adult, infant and child. (C-3)
58. Differentiate between assessing the altered mental status in the adult, child and infant patient.(C-3)
59. Discuss methods of assessing the airway in the adult, child and infant patient.(C-1)
60. State reasons for management of the cervical spine once the patient has been determined to be a trauma patient.(C-1)
61. Analyze a scene to determine if spinal precautions are required. (C-3)
62. Describe methods used for assessing if a patient is breathing.(C-1)
63. Differentiate between a patient with adequate and inadequate minute ventilation. (C-3)
64. Distinguish between methods of assessing breathing in the adult, child and infant patient.(C-3)
65. Compare the methods of providing airway care to the adult, child and infant patient.(C-3)
66. Describe the methods used to obtain a pulse.(C-1)
67. Differentiate between obtaining a pulse in an adult, child and infant patient.(C-3)
68. Discuss the need for assessing the patient for external bleeding.(C-1)
69. Describe normal and abnormal findings when assessing skin color.(C-1)
70. Describe normal and abnormal findings when assessing skin temperature.(C-1)
71. Describe normal and abnormal findings when assessing skin condition.(C-1)
72. Describe normal and abnormal findings when assessing skin capillary refill in the infant and child patient.(C-1)
73. Explain the reason for prioritizing a patient for care and transport.(C-1)
74. Differentiate patients requiring immediate transport versus those not requiring immediate transport. (C-3)
75. Describe the evaluation of patient's perfusion status based on findings in the initial assessment. (C-1)
76. Determine a patient's pulse pressure and relate it to the patient's perfusion status. (C-1)
77. Describe orthostatic vital signs and evaluate their usefulness in assessing a patient in shock. (C-1)
78. Compare and contrast the relative advantages and disadvantages of capillary refill. (C-3)
79. Apply the techniques of physical examination to the medical patient. (C-1)
80. Describe the unique needs for assessing an individual with a specific chief complaint with no known prior history.(C-1)
81. Differentiate between the history and physical exam that is performed for responsive patients with no known prior history and patients responsive with a known prior history.(C-3)
82. Describe the unique needs for assessing an individual who is unresponsive or has an altered mental status.(C-1)

83. Differentiate between the assessment that is performed for a patient who is unresponsive or has an altered mental status and other medical patients requiring assessment.(C-3)
84. Discuss the reasons for reconsidering the mechanism of injury.(C-1)
85. Define and state the reasons for performing a rapid trauma assessment.(C-1)
86. Recite examples and explain why patients should receive a rapid trauma assessment.(C-1)
87. Apply the techniques of physical examination to the trauma patient. (C-1)
88. Describe the areas included in the rapid trauma assessment and discuss what should be evaluated.(C-1)
89. Differentiate cases when the rapid assessment may be altered in order to provide patient care.(C-3)
90. Discuss the reason for performing a focused history and physical exam.(C-1)
91. Describe when and why a detailed physical examination is necessary. (C-1)
92. Discuss the components of the detailed physical exam in relation, to the techniques of examination.(C-1)
93. State the areas of the body that are evaluated during the detailed physical exam.(C-1)
94. Explain what additional care should be provided while performing the detailed physical exam.(C-1)
95. Distinguish between the detailed physical exam that is performed on a trauma patient and that of the medical patient.(C-3)
96. Differentiate patients requiring a detailed physical exam from those who do not. (C-3)
97. Discuss the reasons for repeating the initial assessment as part of the on-going assessment.(C-1)
98. Describe the components of the on-going assessment.(C-1)
99. Describe trending of assessment components.(C-1)

Lesson 2-3: Clinical Decision Making

COGNITIVE OBJECTIVES

At the completion of this topic, the EMT-Intermediate student will be able to:

1. Explain and demonstrate critical thinking skills(C-1, C-3)
2. Explain and demonstrate decision making skills(C-1, C-3)
3. Explain and demonstrate assessment Based Patient Care(C-1, C-3)

Lesson 2-6: Assessment and Management of Shock

LESSON TERMINAL INSTRUCTIONAL OBJECTIVE

At the end of this lesson, the EMT-Intermediate student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the bleeding patient or the patient in shock.

COGNITIVE OBJECTIVES

At the conclusion of this lesson, the EMT-Intermediate student will be able to:

GENERAL

Washington State Specific Objectives – Intravenous Therapy Technician

1. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for shock and hemorrhage. (C-1)
2. Discuss the anatomy and physiology of the cardiovascular system. (C-1)
3. Predict shock and hemorrhage based on mechanism of injury. (C-3)
4. Discuss the various types and degrees of shock and hemorrhage. (C-1)

PATHOPHYSIOLOGY, ASSESSMENT AND MANAGEMENT - Cardiovascular System

5. Discuss the pathophysiology of hemorrhage and shock. (C-1)
6. Discuss the assessment findings associated with hemorrhage and shock. (C-1)
7. Identify the need for intervention and transport of the patient with hemorrhage or shock. (C-1)
8. Discuss the treatment plan and management of hemorrhage and shock. (C-1)

SPECIFIC PATHOPHYSIOLOGY, ASSESSMENT AND MANAGEMENT - Hemorrhage

9. Describe the incidence, morbidity, and mortality of hemorrhage. (C-1)
10. Discuss the management of external hemorrhage.(C-1)
11. Differentiate between the administration rate and amount of IV fluid in a patient with controlled versus uncontrolled hemorrhage.(C-3)
12. Relate internal hemorrhage to the pathophysiology of compensated and uncompensated hemorrhagic shock.(C-3)
13. Relate internal hemorrhage to the assessment findings of compensated and uncompensated hemorrhagic shock.(C-3)
14. Discuss the management of internal hemorrhage.(C-1)

SPECIFIC PATHOPHYSIOLOGY, ASSESSMENT AND MANAGEMENT - Shock

15. Describe the incidence, morbidity, and mortality of shock.(C-1)
16. Describe the body's physiologic response to changes in perfusion.(C-1)
17. Discuss the assessment findings of hemorrhagic shock.(C-1)
18. Relate pulse pressure changes to perfusion status.(C-3)
19. Relate orthostatic vital sign changes to perfusion status.(C-3)
20. Define compensated and uncompensated hemorrhagic shock.(C-1)
21. Discuss the pathophysiological changes associated with compensated shock.(C-1)
22. Discuss the assessment findings associated with compensated shock.(C-1)
23. Identify the need for intervention and transport of the patient with compensated shock.
24. Discuss the treatment plan and management of compensated shock.(C-1)
25. Discuss the pathophysiological changes associated with uncompensated shock.(C-1)
26. Discuss the assessment findings associated with uncompensated shock.(C-1)
27. Identify the need for intervention and transport of the patient with uncompensated shock.
28. Discuss the treatment plan and management of uncompensated shock.(C-1)
29. Differentiate between compensated and uncompensated shock.(C-3)
30. Relate external hemorrhage to the pathophysiology of compensated and uncompensated hemorrhagic shock.(C-3)
31. Relate external hemorrhage to the assessment findings of compensated and uncompensated hemorrhagic shock.(C-3)
32. Differentiate between the administration of fluid in the normotensive, hypotensive, and profoundly hypotensive patient.(C-3)

33. Discuss the physiologic changes associated with the pneumatic anti-shock garment (PASG).(C-1)
34. Discuss the indications and contraindications for the application and inflation of the PASG.(C-1)

Lesson 2-7: Intravenous & Intraosseous Line Placement and Infusion

COGNITIVE OBJECTIVES:

At the end of this lesson, the student will be able to:

1. Define the term intravenous cannulation. (C-1)
2. Describe universal precautions and body substance isolation (BSI) procedures when performing an intravenous cannulation. (C-1)
3. Discuss medical asepsis. (C-1)
4. Differentiate among the different solutions and intravenous cannulation devices used when administering intravenous cannulations for the management of trauma and medical emergencies. (C-3)
5. Identify anatomic landmarks utilized in administering intravenous cannulations. (C-1)
6. Correctly locate three appropriate sites for intraosseous needle insertion. (C-1)
7. Describe the equipment needed, indications, contraindications, complications, and procedures for the preparation and administration of intravenous cannulations, including saline locks. (C-1)
8. Identify the equipment needed and procedures used for discontinuing an intravenous cannulation. (C-1)
9. Describe the procedures, the preparation and administration of a fluid challenge.(C-1)
10. Describe on-line and off-line medical direction/control for intravenous cannulation. (C-1)
11. State the indications and contraindications for insertion of an intraosseous line. (C-1)
12. List the necessary equipment for an intraosseous insertion. (C-1)
13. Describe the steps required for intraosseous needle insertion and confirmation of correct placement. (C-1)
14. Describe the process of securing the intraosseous needle. (C-1)
15. Compare the rate of fluid infusion through a peripheral line versus an intraosseous line, and describe methods of increasing the rate of infusion through an intraosseous line. (C-1)
16. Describe the concept of fluid limitation in patients under 100 pounds. (C-1)
17. State the potential complications of intraosseous needle insertion and infusion. (C-1)
18. Differentiate among the different techniques for obtaining a blood sample. (C-3)
19. Identify locations utilized in obtaining a blood sample. (C-1)
20. Describe the equipment needed, techniques utilized, complications, and general principles for obtaining a blood sample. (C-1)
21. Describe and understand the use and testing of blood glucose monitoring devices. (C-1)
22. Describe disposal of contaminated items and sharps. (C-1)

NOTES:

